MICHIGAN SOCIOLOGICAL REVIEW

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Source: *The Peninsular Papers*, Vol. 1, No. 1 (Fall, 1975), pp. 35-44
Published by: Michigan Sociological Association
Stable URL: https://www.jstor.org/stable/45403382
Accessed: 28-03-2026 03:04 UTC

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THE SCIENTIST AS CRITIC: SCIENTISTS AND SEA-SERPENTS IN THE 19th CENTURY

by

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(The Peninsular Papers, Vol. 1, No. 1, pp. 35 to 44)

In the "social construction of reality", as Berger and Luckman[1] have so happily titled it, the expert plays a central role. In modern society we tend to take for granted the existence of technically trained "experts" on a variety of subjects.[2] The authority of these "experts" stems from our belief that their knowledge of a certain class of objects is more profound than our own. Hence these men are entitled, not only to make statements about this class of objects as a whole, but also to decide particular cases involving them. This latter ability implies the very important right to criticize the validity of the direct experiences of their fellow men with this class of objects.

This right is particularly important when the direct experiences of others involve questionable objects -- like sea-serpents. It may be fruitful, therefore, to examine a case where experts ruled on the "true nature" of the experiences of their fellow men. In this case we have chosen sea-serpents in the 19th Century, as an example of a set of experiences where the nature of a perception is

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itself in doubt. By examining scientific reaction to sea-serpent reports, we may get a better idea of the role that scientists play as the arbiters of "reality".

We must limit our discussion here to the 19th Century for reasons of time. Even in this one century the materials would permit a much longer treatment.[3] Furthermore, we will only have time to examine the general contours of scientific behavior toward sea-serpents during this period, and many of the details such as 1) sources of information 2) how scientists entered the controversy and 3) the role of prior experience, must wait for a fuller treatment.

The first point that we might make is that scientists entered the sea-serpent controversy from a variety of social roles. Some of the men involved, like Richard Owen, were museum officials; others, like William Peck, were academic men; a few, like C.S. Rafinesque-Schmaltz, were semi-independent naturalists. Many were the editors of journals; many were eminent men. The common element is that they all, in one form or another, came forth with -- or were solicited for -- their opinions on whether or not those who had seen serpentine marine animals could in fact have seen what they claimed.

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ATTITUDES TOWARD THE SEA-SERPENT

The most surprising finding is that the larger number of these scientists appeared as witnesses for the defense. We are familiar, from novels like Arthur Conan Doyle's The Lost World, with an image of the scientist as a closed-minded sceptic, who requires the most extreme proof before he will believe in an anomaly like sea-serpents. Indeed, the scientific reaction to flying saucers in the Twentieth Century bears out this stereotype to a large extent. But in the case of sea-serpents, the scientists who made their opinions known did so more often in the role of the creature's defenders. This may of course have been because many "anti" scientists considered it too absurd to discuss; but we cannot be sure that many of its potential defenders did not remain silent as well, for equally strong reasons.

Many of the "pro" scientists dealt approvingly with sea-serpent reports in the course of larger studies. A typical case is C.S. Rafinesque-Schmaltz, one of the most colorful figures in the history of American science. In a paper on snakes published in The American Monthly Magazine in 1817 (it was also published in several learned journals) Rafinesque treated several sea-serpent reports, such as the

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American ones of 1817, with respect.[4] Others, like William D. Peck,[5] a respected academic figure in the United States, published brief articles in which they indicated that they found the reports credible. Journal editors, like Benjamin Silliman in the United States, Edward Newman in Britain, and Ludwig Von Froriep in Germany, not only published the reports in the pages of their journals, but also championed the cause of the beasts in editorials.

The Massachusetts sightings of 1817 prompted an investigation by a committee of the Linnaean Society of New England, which sent three of its members to question witnesses and gather evidence. The committee thereafter delivered a very favorable report on the witnesses' sightings in a small pamphlet.[6] Unfortunately, after having treated the witnesses' reports in a dispassionate manner, the committee moved too readily to accept a small snake -- probably deformed -- as the young of the monster. They included this identification in their report, which detracted much from its public credibility.

Toward the end of the Century, A.C. Oudemans, a Dutch naturalist, published a monumental work (in English) on The Great Sea Serpent (1892).[7] In it Oudemans brought together 187 cases of sea-serpent reports, attempted to

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identify the hoaxes and mis-perceptions, but still found the majority of reports credible. He hoped that his work would serve the same function as that of Ernst Chladni, who in the previous century had championed the cause of meteorites. Oudemans thought that the sea-serpents were enormous mammals, something like a sort of very-long-necked seal.

Some scientists, of course, felt that sea-serpent reports represented a mixed bag of hoaxes and cases of mistaken identity. Samuel Mitchill, 1828, communicated a paper to the New York Lyceum on "The History of Sea-Serpentism", in which he noted several hoaxes and suggested that what other reports remained after the hoaxes were extracted were probably due to more routine aquatic objects, like porpoises, whales, and so forth.[8] Charles Lyell, whose evolutionary theory in geology succeeded Cuvier's cataclysmic one, at first believed in the sea-serpent, on the basis of investigations undertaken by a friend. But after his return to England in 1846, he was disposed to doubt his earlier opinion. What particularly impressed him, he wrote, was that the carcass of a basking shark washed ashore in the Orkneys in 1808, had been mistaken for the carcass of a sea-serpent. Was it not possible, asked Lyell, that in fact ALL sea-serpent reports were due to

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basking sharks?[9]

Another factor in Lyell's change of opinion may have been the influence of Richard Owen. In 1848 the British ship H.M.S. Daedalus had sighted a sea-serpent off the coast of Africa. Upon its return to England, the captain of the vessel had published in the London Times a short description of the encounter. Sir Richard Owen, then one of the most eminent anatomists in Britain, disputed that what Captain McQuhae and his crew had seen was indeed an enormous serpent. He suggested that it might have been an enormous seal. This suggestion got a quick and tart reply from McQuhae. But Owen was widely hailed as "the killer of the sea-serpent".[10] In 1877, when H.M.S. Osborne encountered another strange creature, Owen and his friend Frank Buckland explained the sighting away in Land and Water, a popular journal that Buckland edited:

> "The discrepancies in the records of the watchers of the same phenomena show the difficulty of exact observation at the distances and under the circumstances of the case, both ship and object or objects being on the move; and remarks thereon by observers not conversant with natural history, and so situated, preclude the formation of any opinion worth recording of the nature of the object or objects causing the phenomena as interpreted by the foregoing witnesses."[11]

These remarks can only give the reader a sketchy idea of the full limits of the controversy, but they do indicate the main tendencies of scientific behavior in the case.

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SCIENTIFIC ROLES

In offering these opinions on the nature of the sea-serpent sightings, the scientists intended to instruct both the public and each other. In doing so, they acted both as transmitters of information and as critics. The "transmitter" role was usually latent; the role of critic was usually self-conscious. BY ACTING AS CRITICS OF THE EXPERIENCES OF OTHER MEN, THESE SCIENTISTS WERE ATTEMPTING TO INFLUENCE THE WAY IN WHICH THE PUBLIC, AND PARTICULARLY THE SCIENTIFIC PART OF IT, REGARDED THESE EXPERIENCES. By doing so, they were attempting to negotiate the boundaries of social reality, and either to place sea-serpents on the inside, or on the outside of the circle of objects regarded as "real".

The channels through which the scientists attempted to influence their fellow men were in most cases scientific or literary journals; Owen's remarks in the Illustrated London News was one of the few exceptions. The articles in these journals would be read by the experts' scientific colleagues and the literary elite. The learned readers in turn might pass on their views in the form of correspondence, lectures, journal or encyclopedia articles, and textbooks. In these more popular types of communication,

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these views might reach the educated and literate public, and through them, the uneducated and illiterate portions of the public.

How successful they were is another matter. Doubtless the division in opinion kept either side from dominating. Nor were they the only "experts" in the case. Many persons may have been just as willing to take the word of a captain of a ship as that of a scientist in London or Boston. The situation mirrors, in many respects, the present controversy over flying saucers (also known as Unidentified Flying Objects), in which scientists dispute with airline pilots and housewives whether what they have seen is, indeed, what they think they have seen.

We need to know more about the role that scientists play as experts. The scientist is particularly important in defining the boundaries of the "real", since he is most likely to be turned to when the subject involves controversial experiences. We sometimes lose sight of the fact that, in our day, the true meaning of ambiguous experiences is not adjudicated by priests but by scientific experts. The right to interpret the validity of personal experience of others, even in the light of a body of systematic knowledge, is the power to define legitimate "reality". Those who have experiences outside this reality

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can then be variously explained as hoaxers, psychotics, or the victims of illusion. Hence the role of the expert in the social construction of reality can ill afford to be neglected.

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